IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Munetsugu UEYAMA, et al.
Title:	SUPERCONDUCTING WIRE, SUPERCONDUCTING MULTIFILAMENTARY WIRE USING THE SUPERCONDUCTING WIRE, AND METHOD OF MANUFACTURING THE SAME
Appl. No.:	10/553,171
International Filing Date:	10/27/2004
371(c) Date:	10/17/2005
Examiner:	PATEL, ISWARBHAI B
Art Unit:	2841
Confirmation Number:	1079

DECLARATION UNDER 37 CFR 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Jun Fujikami, hereby declare as follows:

1. I am one of the namely inventors of the above-captioned application.

2. I received my Bachelor in engineering from the University of Tsukuba in the year of 1989. In the year of 1991, I received my Master's Degree in engineering from the University of Tsukuba. Since then I have worked in the field of conductors as a project general manager at Sumitomo Electric Industries, LTD. in Osaka. I am currently an assistant general manager.

3. I performed experiments conducted on 2001 and 2002 that show that maximum stress (mechanical strength) is lower when a breaking strain is increased in a stress-strain test of the cladding metal material discussed in Samples 1 and 2. The experiments were conducted at Osaka Works of Sumitomo Electric Industries, Ltd., 1-3, Shimaya 1-chome, Konohana-ku, Osaka-shi, Osaka, 554-8511.

4. Breaking strain and maximum stress of silver wires annealed at different temperatures were measured. Specifically, Samples 1 to 2 were initially prepared.

5. Sample 1 was composed of a silver wire with 99.97 mass % Ag and 0.03 mass % Mn and was annealed for 10 hours at 30°C.

6. Sample 2 was composed of a silver wire with 99.97 mass % Ag and 0.03 mass % Mn and was annealed for 10 hours at 300°C.

7. Next, a breaking strain (%) and a maximum stress (MPa) of Sample 1 and Sample 2 were measured. The breaking strain was measured based on a gage length at the time of breaking. The maximum stress was measured with a load cell and a tensile tester manufactured by Instron. Results of measurement are shown in Figs. 1 to 3 attached as Exhibit 2.

8. Fig. 1 is a graph showing the relationship between an anneal temperature and a breaking strain. Fig. 2 is a graph showing the relationship between an anneal temperature and a maximum stress. Fig. 3 is a graph showing relation between the breaking strain and the maximum stress based on the results of the measurements shown in Figs. 1 and 2.

9. Fig. 1 shows that the breaking strain of the silver wire in Sample 2 was greater than the breaking strain of the silver wire in Sample 1. Sample 2 had a higher anneal temperature than Sample 1, and as shown in Fig. 1, Sample 2 had a higher breaking strain than sample 1. Sample 2 also had a higher ductility than Sample 1.

10. Fig. 2 shows that the maximum stress of the silver wires in Sample 2 was lower than the maximum stress of the silver wire in Sample 1. Sample 2 had a higher anneal temperature than Sample 1, and as shown in Fig. 2, Sample 2 had a lower maximum stress than sample 1.

11. Fig. 3 shows the relationship between maximum stress and breaking strain. Maximum stress of Sample 2 is higher than the maximum stress of Sample 1. The breaking strain of Sample 1 is higher than the breaking strain of Sample 2. Data relating to Samples 1 and 2 shows that breaking strain Samples 1 and 2 was inversely proportional to their maximum stress.

I further declare that all statements made in this declaration of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 18 USC § 1001 and that such willful, false statements may jeopardize the validity of legal decision of any nature based on them.

Date Oct. 22. 2009.

Jun Fujikami

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